

Jenny 5 – the robot

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Purpose

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To create a robot which can help humans in their daily tasks.

Source of inspiration was the Johnny 5 robot from the Short Circuit movie (1986).

The robot should have:

- Human size
- 2 arms
- Simple navigation system for many types of environments encountered in daily life.
- Many degrees of freedom
- A lot of sensors.



What we have so far

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An almost humanoid:

- Human size
- Tracks (instead of legs)
- 3 cameras (located on head and grippers)
- 18 motors (16 steppers and 2 DC)
- Controlled by a laptop (i7 Skylake)
- 6 Arduino Nano
- 16 A4988 stepper drivers
- 2 TB6612FNG DC motor drivers
- 13 potentiometers
- 2 infrared sensors
- 1 infrared LIDAR
- 1 ultrasound
- Powered by a 14.8 V LiPo battery



Challenges

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Too many to enumerate.

Most important:

- Not very easy access to materials.
- Motors not providing specified torque.
- 3D printers not precise enough to print T2.5 pulleys.
- Object detection software in public domain of very poor quality.



What it can do so far

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- Following a person by face detection
- Waive hand



Next steps

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Complete the design and construction.

Put it to do real tasks (such as cleaning a table etc.)



More info

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www.jenny5.org

www.github.com/jenny5-robot

